

**KENDRIYA VIDYALAYA NO 02 AFS HINDAN  
SUMMER VACATION (2017-18) HOME WORK  
SUBJECT: COMPUTER SCIENCE**

**Chapter : Revision Tour**

1. Define Macro with suitable example.
2. Explain in brief the purpose of function prototype with the help of a suitable example.
3. What is the role of typedef? Can it be used to create new data type?
4. What is the difference between Object Oriented Programming and Procedural Programming?
5. What is the difference between Global Variable and Local Variable? Also, give a suitable C++ code to illustrate both.
6. Differentiate between ordinary function and member functions in C++. Explain with an example.
7. What is the difference between call by reference and call by value with respect to memory allocation? Give a suitable example to illustrate using C++ code.
8. What is the difference between actual and formal parameter ? Give a suitable example to illustrate using a C++ code.
9. Differentiate between a Logical Error and Syntax Error. Also give suitable examples of each in C++.
10. Find the correct identifiers out of the following, which can be used for naming variable, constants or functions in a C++ program :  
While, for, Float, new, 2ndName, A%B, Amount2, \_Counter
11. Out of the following, find those identifiers, which cannot be used for naming Variable, Constants or Functions in a C++ program :  
\_Cost, Price\*Qty, float, Switch, Address One, Delete, Number12, do
12. Find the correct identifiers out of the following, which can be used for naming Variable, Constants or Functions in a C++ program :  
For, while, INT, NeW, delete, 1stName, Add+Subtract, name1

**Questions Based on Class & Object, Constructor and Inheritance Chapter**

2. (a) Differentiate between Constructor and Destructor functions giving suitable example using a class in C++. When does each of them execute ?

(b) Observe the following C++ code and answer the questions (i) and (ii). Assume all necessary files are included :

```
class FICTION
{
long FCode; char FTitle[20]; float FPrice; Public:
FICTION() //Member Function 1
{ cout<<"Bought"<<endl;
FCode=100;strcpy(FTitle,"Noname");FPrice=50;
}
FICTION(int C,char T[],float P) // Member Function 2
{ FCode=C;
```

```

        strcpy(FTitle,T);
        FPrice=P;
    }
    void Increase(float P)                // Member Function 3
    { FPrice+=P; }
    void Show()                          // Member Function 4
    { cout<<FCode<<":"<<FTitle<<":"<<FPrice<<endl; }
    ~FICTION()                            // Member Function 5
    { cout<<"Fiction removed!" <<endl; }    };
void main()                              //Line 1
{                                          //Line 2
    FICTION F1,F2(101,"Dare",75); //Line 3  for (int l=0;l<4;l++) //Line 4
    {                                      //Line 5
        F1.Increase(20);F2.Increase(15); //Line 6
        F1.Show();F2.Show();            //Line 7
    }                                    //Line 8
}                                        //Line 9

```

(i) Which specific concept of object oriented programming out of the following is illustrated by Member Function 1 and Member Function 2 combined together ?

- Data Encapsulation
- Data Hiding
- Polymorphism
- Inheritance

(ii) How many times the message "Fiction removed!" will be displayed after executing the above C++ code ? Out of Line 1 to Line 9, which line is responsible to display the message "Fiction removed!" ?

(c) Write the definition of a class METROPOLIS in C++ with following description :

Private Members

- MCode //Data member for Code (an integer)
- MName //Data member for Name (a string)
- MPop //Data member for Population (a long int)
- Area //Data member for Area Coverage (a float)
- PopDens //Data member for Population Density ( a float)
- CalDen() //A member function to calculate Density as PopDens/Area

Public Members

- Enter() //A function to allow user to enter values of  
// Mcode,MName,MPop,Area and call CalDen() function
- ViewALL() //A function to display all the data members also display a  
message  
//“Highly Populated Area” if the Density is more than 12000

(d) Answer the questions (i) to (iv) based on the following :  
class PRODUCT

```

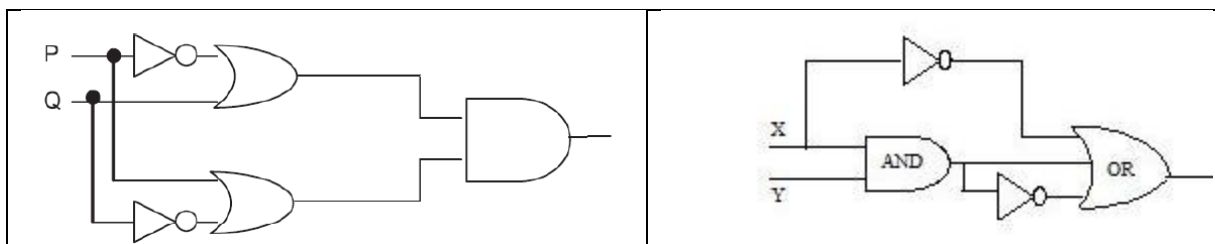
{ int Code; char Item[20];
protected:
float Qty;
public:
PRODUCT();
void GetIn(); void Show();          };
class WHOLESALER
{ int WCode;
protected:
char Manager[20];
public:
WHOLESALER();
void Enter();
void Display();          };
class SHOWROOM : public PRODUCT, private WHOLESALER
{ char Name[20],City[20];
public:
SHOWROOM();
void Input();
void View();          };

```

- (i) Which type of Inheritance out of the following is illustrated in the above example ?
- Single Level Inheritance
  - Multi Level Inheritance
  - Multiple Inheritance
- (ii) Write the names of all the data members, which are directly accessible from the member functions of class SHOWROOM.
- (iii) Write the names of all the member functions, which are directly accessible by an object of class SHOWROOM.
- (iv) What will be the order of execution of the constructors, when an object of class SHOWROOM is declared ?

### Chapter Boolean Algebra

1. Write the equivalent Boolean Expression for the following Logic Circuit



2. Draw a Logical Circuit Diagram for the following Boolean expression:

$$A.(B+C')$$

3. Prove  $x'.y'+y.z = x'yz+x'yz'+xyz+x'yz$  algebraically.

4(a) Verify the following using Boolean Laws.

$$X + Y' = X.Y + X.Y' + X'.Y'$$

5. Draw the Logic Circuit for the following Boolean Expression :

$$(U + V').W' + Z$$

6. Derive a Canonical SOP expression for a Boolean function F, represented by the following truth table :

A	B	C	F(A,B,C)
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1